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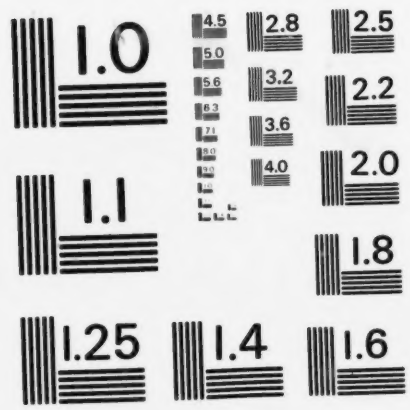

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By-Nichols, Robert C.

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Reviewed are findings in the literature of racial differences in intelligence which are consistent in revealing "real differences in test performance between Negroes and whites." The interpretation that these racial differences are due to cultural bias in the tests is denied. A discussion of the genetic vs. environmental etiology of the differences notes that the fundamental issue should be the relative effectiveness of various educational procedures which might reduce racial differences in ability, if in fact they are due to certain environmental factors. Also mentioned are the reported socioeconomic, geographic, and individual differences which must be considered in educational research and practice oriented toward equal educational opportunity. (NH)

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Implications of Racial Differences in Intelligence for Educational Research and Practice[1]

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Robert C. Nichols
State University of New York at Buffalo

A few days ago when I began to write this paper I took out the program to see what title I had given to the organizers of this symposium, and I was shocked to see what grandiose ideas I must have had when the actual presentation was far away. Now I must confess that I can't live up to the title, and it doesn't make me feel much better to think that the task might be impossible for anyone.

All I have are a few generalizations about racial differences that I have gleaned from the literature and that the evidence convinces me are probably correct. Then I have some personal biases about what this might mean for educational research and practice. If I have led you to expect more, I am sorry.

There has accumulated a large amount of evidence concerning differences in intelligence and school achievement between racial groups in the United States. Whenever anything approaching representative samples have been tested, the mean for Negroes has been about one standard deviation below the mean for Whites. The full range of evidence has been reviewed by Drager and Miller (1968), and by Shuey (1966).

Typical of the findings are the standardizations of the Binet by Kennedy (1963) on a representative sample of Negro children in the South East. Kennedy found a mean Binet IQ of 81 for the Negro children. He also found a standard deviation of 12, which is somewhat smaller than the standard deviation of 16 typically found for Binet IQs.

The recent Equality of Educational Opportunity Survey by the U.S. Office of Education (Coleman, et al. 1965), the well known Coleman Report, in which large samples representative of Negro and White school children in grades 1, 3, 6, 9

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and 12 were tested in various regions of the U.S., found that Negro children scored about one standard deviation below White children on several ability tests, and this difference held in all grade levels, in all regions of the country and for Rural and Metropolitan areas.

Racial differences in performance on The Armed Forces Qualification Test, which was administered to some 10 million draftees over the last 10 years by the Selective Service, were reported a couple of years ago in U.S. News and World Report (Oct. 17, 1966). In every state Whites scored higher than Negroes, except for West Virginia in which they were about equal. Nationwide 68 percent of Negroes failed the test compared with 19 percent of Whites. The highest score level, containing 6.7 percent of all draftees, was attained by 7.6 percent of the Whites as compared with .3 percent of the Negroes. It should be pointed out that The Armed Forces Qualification Test results do not include examinations for voluntary enlistments nor do they include those given student or occupational deferrments. If these people were included the racial differences would likely be greater than those reported.

These findings are so consistent that there seems to be little doubt that they represent real differences in test performance between Negroes and Whites in the United States, and that they are not artifacts of a specific test or a specific sample of subjects.

These group differences are so large that they cannot be dismissed as insignificant relative to individual differences within a racial group. The Equality of Educational Opportunity Survey pointed out that a one standard deviation difference between mean scores of Negroes and Whites indicates that about 15 percent of Negroes will score above the mean for Whites. This percentage will be smaller if Kennedy's finding of a smaller variance among Negroes than among Whites proves to be general.

In somewhat more colorful language Pat Moynihan stated in his study of The Negro Family for the Department of Labor (1965):

"The ultimate mark of inadequate preparation for life is the failure to rate on the Armed Forces mental test. The Armed Forces Qualification Test is not quite a mental test, nor yet an education test. It is a test of ability to perform at an acceptable level of competence. It roughly measures ability that ought to be found in an average 7th or 8th grade student. A grown young man who cannot pass this test is in trouble.

"Fifty-six percent of Negroes fail it.

"This is a rate almost four times that of the Whites." (P. 40)

The discrepancy between Moynihan's 56 percent failure rate and the U.S. News and World Report failure rate of 68 percent for Negroes is apparently due to the fact that Moynihan's data were for 1962, while the U.S. News and World Report's data were for the period 1955-1966.

An admittedly biased friend of mine on reading these Selective Service Test results said, "That just shows how smart those black cats are." However, these results are so consistent with other findings that I think we must take them as representative of real racial differences in test performance.

There are several possible reasons for racial differences in test scores which may be responsible in various degrees and combinations for the observed results. Ironically it is the presumed reason for the differences rather than the differences per se which have the greatest implications for education, and we have much less persusive data concerning reasons for the differences than for the mere existance of the differences.

A common explanation of racial differences in test performance is that they are due to cultural bias in the tests, since test items typically tend to reflect White middle class values. It is undoubtedly true that test items reflect

cultural content, and it has been demonstrated that it is possible to construct an information test containing items relevant to the Negro sub-culture on which Negroes obtain higher scores than do Whites. However, the differences in performance on traditional intelligence tests cannot be dismissed as unimportant on this basis. These tests do measure abilities that tend to be valued by the White middle class; but these are rather basic abilities, such as the ability to read and understand the language, the ability to use quantitative information, and the ability to solve verbally stated problems by reasoning. It is hard to imagine any but the most simple society in which these abilities would not be of great adaptive value.

Another line of evidence which suggests that the racial differences in test scores are not due primarily to trivial bias in the items is the predictive validity of these tests for school performance. Verbal ability tests have about the same predictive validity for Negroes as for Whites (Stanley and Porter, 1967), and in college samples containing both Negroes and Whites the Negroes tend to obtain slightly lower grades than predicted from their test score, rather than higher as would be expected if the test scores were spuriously low because of trivial bias in the test items (Cleary, 1968).

The failure of the many attempts to develop "culture fair" tests also suggest that racial differences in performance are not due to trivial bias. A typical result is that of the Equality of Educational Opportunity Survey in which the racial differences on the non-verbal test were as large as those for verbal abilit

If we accept the test score differences as representing real differences in intellectual ability at the time the test is administered, the possible explanations for these differences divide themselves into two clases: the genetic and the environmental. After arguing at some length on both sides of the heredity-environment issue, I have come to the conclusion that we can never decide this issue for sure on the basis of any data we are likely to have in the near future.

Racial identity is a salient variable in our culture, and that is something that cannot be controlled (almost by definition) in studies of racial differences. I was once quoted in the press as saying that our twin studies suggested that a large proportion of individual differences in intelligence could be attributed to genetic differences. I wasn't talking about racial differences at the time, but I got a very indignant letter from a lady in California insisting that our twin study could not possibly provide adequate evidence for this conclusion. She said, "The only way you could prove that would be to take a set of White identical twins at birth, dye one twin permanently black and adopt it out to a Negro family, and leave the other one white to be raised by a White family." This lady obviously has considerable sophistication in evaluating research evidence, and she has hit on the inherent difficulty in available data concerning racial differences.

However, the degree to which racial differences in ability are attributable to genetic factors is not of critical importance in discussing the implications of these differences for education. The genetic theory seems to be of greatest interest to those who would like to promote a kind of racial chauvinism, but they can be dismissed on other grounds, such as the lack of a precise definition of race and the fact that neither Negroes nor Whites in the United States are representative of any larger racial group that might be of interest.

Those who legitimately inquire about the relative importance of heredity and environment in bringing about the observed differences in ability between socially defined racial groups in the United States usually turn out to be more interested in the presumed correlaries of the answer rather than in the answer itself. After all, the extent of genetic differences between two groups selected by unkown criteria from very ill-defined parent populations is of relatively little importance in itself. What is important is the conclusions that usually accompany the belief in either hereditary or environmental etiology. If the difference is genetic we

tend to think that it is relatively difficult to change, while if it is environmental we tend to think it is relatively easy to change.

It would seem to be better scientific strategy to study the effectiveness of the various proceedures that might reduce racial differences in ability if they are due (at least in part) to certain environmental factors, rather than to accept a conclusion deduced with dubious logic from a guess about an essentially unkownable etiology.

There is some evidence of this sort available, and I am sorry to report that what we have does not seem very encouraging to me.

One environmental factor that seems a logical source of at least part of the racial differences in ability is the quality of education to which children of two races are exposed. One rather surprising finding of the Equality of Educational Opportunity Survey is that the quality of education available to Negro and White children does not differ greatly when measured by such relatively superficial indicators as budgets, class size and teacher qualifications. Dramatic comparisons of the worst slum schools with the best suburban schools have tended to make us less aware of the great middle range of schools that most children of both races attend. Still schools seem to be an obvious source of some of the ability differences. If so, improvement of schools should reduce the differences The U.S. Civil Rights Commission (1967) in its study of Racial Isolation in the Public Schools, surveyed over 20 compensatory education programs that have been undertaken, such as the Higher Horizons Program in New York, the Bannaker Project in St. Louis, and the Educational Improvement Program in Philadelphia. Education researchers should be shocked, and perhaps ashamed, at the quality of the evidenc available for the evaluation of these ambitious programs. Nevertheless there was a very consistent finding that these compensatory programs failed to result in appreciable gains in measured ability. The Civil Rights Commission concluded:

"Compensatory education programs on the present scale are unlikely to improve significantly the achievement of Negro students isolated by race and social class." (P. 205)

The Civil Rights Commission did conclude that integrated schools might reduce racial differences in ability, but the evidence on which this conclusion was based was methodologically weak and would not convince anyone who did not want very badly to believe it.

Another finding of the Equality of Educational Opportunity Survey was that the racial differences were as large in first grade as in twelfth grade. The increasing discrepancy between races with increasing grade level that would be expected if the schools were a major factor in producing the differences was found only in the rural South. The authors of this report stated this finding negatively:

"Whatever may be the combination of non-school factors - poverty, community attitudes, low educational level of parents - which put minority children at a disadvantage in verbal and non-verbal skills when they enter the first grade, the fact is the schools have not overcome it." (P. 21)

Given our present state of ignorance about the determinants of individual differences in ability it is hard to think what the schools might possibly do to overcome it. I do not see any possibility that seems a good enough bet to apply on a large scale. A better strategy, it would seem, would be to try out many different ideas, each on a small scale. I am aware that there are some excellent projects of this sort going on now. I can only say that there should be more, and that they should be carefully monitored and reported so that we extract all of the valuable information that can be obtained from whatever happens.

The finding of an increasing discrepancy in performance of the two races with increasing grade level in the rural South is consistent with findings such as those of Lee (1951) indicating that the test performance of Negro children improves when

they migrate from the South to Northern cities and those of Wheeler (1942) indicating that extreme cultural isolation has an increasingly depressing effect on test scores with increasing age. This evidence, combined with the difficulty of finding differential school effects in more typical school settings, might be interpreted as indicating a threshold effect. Extreme cultural isolation can have a depressing effect on test performance; but, once a certain minimal level is reached, further cultural opportunities do not have a great facilitative effect on performance.

There is some contradictory evidence on the possible role of schools in promoting or maintaining racial differences in ability. On the one hand evidence such as that discussed above is very consistent in showing the insensitivity of test performance and of racial differences in test performance to wide variations in school programs and school characteristics. When such an ambitious project as the More Effective Schools Program in New York fails to have an appreciable effect on test performance of Negro students, and when this result is consistent with findings of similar experiments elsewhere, it would seem that one must conclude that individual differences in test performance are very persistent and difficult to change. On the other hand there are a series of relatively small studies, which suggest that certain kinds of fairly subtle psychological influences can have a big impact on test scores. There are a number of studies showing that the threat involved in racial comparison and interaction adversly affects the performance of Negro students (Katz, 1968). A study by Rosenthal and Jacobson (1968), which has received a great deal of attention recently, suggests that teacher expectations can have a big impact on test performance. They found that merely telling the teacher at the beginning of the year that a child was expected to improve resulted in big gains in test performance.

It seems to me a paradox that whispering a few words in a teacher's ear can have a big effect while doubling a school budget and introducing all sorts of advanced programs has little effect. One body of literature easily leads us to believe that a large part of the difference in test performance between Negroes and Whites could be due to the accumulation of subtle psychological effects of discrimination and low expectations. Yet attempts to decrease test score differences by changing the psychological environment have not worked. This seems to be an area badly in need of further research. Why are the effects found in small studies lost when an attempt is made to apply them on a large scale? Perhaps Rosenthal's other work on experimenter bias offers a clue to this paradox.

Another possible source of racial differences in ability is the differential home environment of Negro and White children. Attention has been directed to the possible importance of early experiences by the very early appearance of substantial racial differences in ability and by the difficulty of reducing these differences by programs directed at older children. Since there are large racial differences in socioeconomic status, and since socioeconomic status is substantially related to ability within a given racial group, many people have suspected that the racial difference may be due to differences in intellectual stimulation and material advantages that are typically available to young children of the two races.

Adopted child studies, such as those reported by Honzik (1957), show a greater correlation between the child's test performance and the socioeconomic status of his true mother, who did not raise him, than with the socioeconomic status of the home in which he was raised. Such findings suggest that most of the correlation between socioeconomic status and ability cannot be attributed to differential early environmental experiences of the various socioeconomic groups.

Although it is difficult to control for socioeconomic differences between races, when this has been done there has remained a large racial difference in

ability. Wilson, (1967), in a study of school children in Richmond, California, found that race accounted for a significant amount of variance in ability test scores in a regression equation which also included indices of home, neighborhood and school socioeconomic status.

In a further analysis of the Equality of Educational Opportunity Survey data performed for the Civil Rights Commission, a similar correlation was found for the two races between parent's education and child's ability with the regression line for Negroes being considerably lower than that for Whites. These data, reported in the Commission's study of Racial Isolation in the Public Schools (1967, p. 80), show that 12th grade Negro children whose fathers had some college work beyond high school scored lower on the verbal ability test than did 12th grade White children whose fathers did not graduate from high school. These results are quite discouraging to those of us who had hopes that the rising educational and economic status of Negroes in the U.S. would result in a great reduction in ability differences between the two races.

There have been a number of attempts to change the early environment of disadvantaged children in a way that would improve their later test performance. I have had difficulty finding reports of careful evaluations of these programs, but what is available does not seem to suggest that what has been done has had a great deal of impact. A follow-up study of Head Start children conducted by Wolf and Stein (1965), for example, suggests that, although the Head Start children did enter first grade with a head start over comparable controls, this initial advantage was lost during the first year of school. This result has sometimes been interpreted to mean that the Head Start program was not long enough or intensive enough to have a lasting impact and that it should be expanded to younger age levels. This may be a correct interpretation, but results so far should make us

want careful evaluative studies before we conclude that such programs can play an important role in reducing racial differences in ability.

The large differences between the test performance of Negroes and Whites in the United States is of special concern at this time because of its implications for social equality between the races. However, there are other group differences which are just as large, just as pervasive and deserve just as much attention in attempts by the government and other groups to establish conditions that will allow each citizen to achieve the maximum possible for him, given the present state of educational technology.

We have already mentioned differences in test performance between children from differing socioeconomic groups within a given race. The differences between the two ends of the socioeconomic continuum are larger than are differences between Negroes and Whites.

There are also large differences between children living in various geographical areas of the U.S., and these differences have not received as much attention as have differences between racial and socioeconomic groups. When I was working at the National Merit Scholarship Corporation I was continually reminded by our data of the large differences in performance between students tested in different states and in different Metropolitan areas. These differences between geographical areas were very stable from year to year. Our experience at National Merit was very similar to geographical differences reported for the selective service examination and for various test standardization projects.

For example, students in Connecticut, which is usually one of the highest states, typically score about one-half standard deviation above the mean, and students from Arkansas, which is usually one of the lower states, typically score about one-half standard deviation below the mean for the U.S. as a whole. Thus, if one draws distributions of students tested in these two states, there is about

the same difference between the means and about the same degree of overlap as is observed in distributions of scores of Negroes and Whites.

The analogy between geographical differences and racial differences is useful for illustrating several points about group differences in test scores. The first of these is that in spite of the large difference between means there is overlap all along the scale. There are some extremely bright people in Arkansas and there are some fairly dull ones in Connecticut. Although mean differences in test scores obtained by students living in different states are extremely stable and dependable, knowledge of the state in which each member of this audience attended high school would tell us nothing about the individual differences in ability among this group. Even though there are large group differences, group membership tells us nothing about individual performance once the social sorting and selective processes have been at work. On the other hand when dealing with representative samples from parent groups which have large mean differences knowledge of group membership can be quite useful in certain kinds of selection programs. For example, suppose we want a number of high school students who score above the national mean on a scholastic aptitude test for some sort of program in higher education. If we ran the selection program in Connecticut, about 70 percent of those tested would qualify If we tested in Arkansas, only about 30 percent would qualify. Clearly, if we are concerned about economy and efficiency of selection, we should limit our search to Connecticut. The gain in efficiency would be much larger with a higher cutting score. For example, in the 1965 Merit Scholarship competition 10 percent of the students tested in Connecticut scored high enough to be commended in the Merit program, while only 2 percent of those tested in Arkansas scored this high (National Merit Scholarship Corp., 1965). Such a large gain in efficiency of selection is likely to be attractive to selection officers. Yet, if each makes the rational decision for his program and limits his search to Connecticut, the talented

students in Arkansas will be deprived of many opportunities. The goal of social equality comes into conflict with the rational operation of a free enterprise system. In order to avoid social inequities we must pay a price in ease and economy of sorting people according to their abilities. We must make the extra effort necessary to assess each individual person without regard to his group membership and to deal with him in terms of his own capabilities rather than his group membership. The result of this individual selection will be unequal representation of the parent populations in any sub-group that might be selected whenever there are mean differences between parent populations. If college attendance were based solely on ability, the college attendance rate of high school graduates from Connecticut would be higher than that of students from Arkansas, as it indeed is, but rather than representing a social inequity this is the expected result of treating each individual person according to his individual characteristics. It seems to me that we will only have equality of opportunity when we take the trouble to make careful individual assessment and when we refrain from the easy and often practically useful reliance on group stereotypes.

The unit for social opportunity is the individual person, not the group. Group differences are useful only as a possible indication that arbitrary limitations may exist for some individual people within a given group. These limitations should be tracked down and eliminated wherever possible.

We are still in the tracking down stage with respect to racial differences in intelligence as well as geographical differences. Thus, it seems to me that the major implication of racial differences in intelligence for educational research and practice is that some of the effort now devoted to wild attempts to reduce racial differences in performance should be diverted to increase the search for the reasons for these differences.

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